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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/461,728	12/16/1999	GREG J. REGNIER	219.36965XOO	4189

7590 10/03/2003

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EXAMINER

DO, NIAT Q

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 10/03/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/461,728

Applicant(s)

REGNIER ET AL.

Examiner

Nhat Do

ND

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-15 and 18-23 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 18 is objected to because of the following informalities:

Claim 18 is objected because the duplicated term “and one or more control channels” of line 3 should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 10-15, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,872,769 to Caldara et al in view of U.S. Patent No. 5,790,522 to Fichou et al.

Regarding to claims 1, 10, and 21, Caldara et al disclose a network comprising:

A first node/host system 20 has a first plurality of FIFO queues arranged for high priority to low priority data movement operations (Fig. 1, 6; col. 9, lines 56, and 57);

A second node/remote system 22 has second plurality of FIFO queues arranged for high priority to low priority data movement operations connected to the first node by control and data channels (Fig. 1, 6; col. 5);

I/O transactions are accomplished via the data switch 13, and BA 12 for moving commands and data between the two nodes (Fig. 1).

Caldara et al fail to disclose the first and second pluralities of queues are arranged in correspondence with each other. Fichou et al disclose a switching system in figure 4 wherein the first plurality of queues in the receive adapter (first node) are arranged in correspondence with the second plurality of queues in the transmit adapter (second node). A skilled artisan would have been motivated to modify the first and second pluralities of queues in Caldara et al so that they are corresponding to each other in order to reduce jitter and delay as taught by Fichou et al (Col. 6, lines 49, and 50). Therefore, it would have been obvious to a person having ordinary skill in the art by the time the invention was made to have the first and second pluralities of queues arranged in correspondence with each other in Caldara et al system.

Regarding to claims 2, and 11, Caldara et al fail to disclose control channels prioritize command processing with different priority level.

However, Caldara et al disclose the data flow is controlled on per queue basic (Col. 5, lines 50-63) and the queues are arranged in priority level. A skilled artisan would have been motivated to transfer the control signal of the high priority queue (high priority commands) before transfer the control signal of the low priority queue (low priority commands) in order to give the high priority queues the chance to transfer data before the low priority queue. Therefore, it would have been obvious to a person having ordinary skill in the art by the time the invention was made to assign control channels prioritize command processing with different priority level.

Regarding to claims 3, 12, Caldara et al disclose providing queue for control commands (Col. 5, lines 4-6); and queue for data movement operation (Fig. 6) but fail to disclose providing high priority queue for high priority commands and low priority queue for low priority

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commands. However, Caldara et al disclose the queues are classified based on priority. It would have been obvious to a person having ordinary skill in the art by the time the invention was made to provide high priority queue for high priority commands and low priority queue for low priority commands. A skilled artisan would have been motivated to do so because using one common queue for all commands makes the command processing more complicated and difficult.

Regarding to claims 4, and 13, Caldara et al disclose data is transmitted in groups of cells, and each cell has a header utilized for indicating whether a cell is transmitted in a priority order (Col. 1, lines 18-25; col. 6, lines 9-20).

Regarding to claim 5, Caldara et al disclose a switch, which comprises a plurality of different routes for connecting the first and second node (Fig. 1, 6).

Regarding to claims 6, and 14, further to the rejection claim 1, from figure 1, Caldara et al disclose each port has an input and output interface, therefore the examiner is in the position the first node comprises the input interface 0, and output interface 0, and the second node comprises the input interface n, and output interface n.

Caldara et al fail to disclose each node multiplexes and transmits cells of the same priority from multiple queues. Fichou et al disclose in figure 8 the input interface multiplexes and transmits cells of the real-time data from RT1 and RT2. A skilled artisan would have been motivated to modify the input interface of Caldara et al so that it multiplexes and transmits cells of the same priority from multiple queues in order to reduce jitter and delay as taught by Fichou et al (Col. 6, lines 49, and 50). Therefore, it would have been obvious to a person having

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ordinary skill in the art by the time the invention was made to multiplex and transmit cells of the same priority from multiple queues.

Regarding to claims 7, 15, Caldara et al disclose the data is spread between multiple data channels (Fig. 6), and it is inherent that latency is decreased and bandwidth is increased when data is spread in different channels.

Regarding to claims 18, and 19, further to the rejection of claim 3, Caldara et al disclose:

Establishing control channel for transferring commands that describe data movement operation between two nodes (Col. 5, lines 1-30);

Transferring data in groups of cells (Col. 1, lines 18-25; col. 5, lines 50-63).

Caldara et al fail to disclose assigning logical priority to control channel for transferring high priority commands before low priority commands. However, Caldara et al disclose the data flow is controlled on per queue basis (Col. 5, lines 50-63) and the queues are arranged in priority level. A skilled artisan would have been motivated to transfer the control signal of the high priority queue (high priority commands) before transfer the control signal of the low priority queue (low priority commands) in order to give the high priority queues the chance to transfer data before the low priority queue. Therefore, it would have been obvious to a person having ordinary skill in the art by the time the invention was made to assign logical priority to control channel for transferring high priority commands before low priority commands.

Regarding to claim 20, Caldara et al disclose data is transmitted in groups of cells, and each cell has a header utilized for indicating whether a cell is transmitted in a priority order (Col. 6, lines 9-20).

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Regarding to claims 22, and 23, further to the rejection of claims 1, and 18 respectively, Caldara et al fail to disclose a computer-readable medium for storing computer executable instructions for controlling the procedure. However, it is well known in the art that a procedure can be implemented by using hardware, software, or firmware. Each way has its own trade-off characteristics. Using software gives more flexibility in modifying the system because what must be done is just rewriting the program. Therefore, it would have been obvious to a person having ordinary skill in the art by the time the invention was made to make a computer-readable medium for storing computer executable instructions for controlling the procedure. A skilled artisan would have been motivated to do so in order to employ the flexibility in modifying the system.

Response to Arguments

4. Applicant's arguments with respect to claim 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

5. Claims 8, 9, 16, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhat Do whose telephone number is (703) 305-5743. The examiner can normally be reached on 8:30 AM - 5:30 PM Monday - Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Nhat Do
Examiner
Art Unit 2663

ND

September 23, 2003



MELVIN MARCELO
PRIMARY EXAMINER